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| 10/090,019 | 02/25/2002 | Masaki Hirota | FUJM 19.441 | 3891 |

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| EXAMINER | |
|---|---|
| FOX, JAMAL A | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2664 | |

DATE MAILED: 12/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) |
|---|---|---|
| | 10/090,019 | HIROTA ET AL. |
| | Examiner | Art Unit |
| | Jamal A. Fox | 2664 |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *25 February 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *5 and 7* is/are allowed.

6)☒ Claim(s) *1-4,6 and 8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/25/02 & 5/31/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Specification*

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because it is not within the range of 50 to 150 words. Correction is required. See MPEP § 608.01(b).

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-4 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujimoto (U.S. patent No. 4,748,623).

Referring to claim 1, Fujimoto discloses a time-division multiplexing (time division multiplexing, col. 1 lines 11-22) method comprising: (a) a step of generating a plurality of first signals and a plurality of second signals to which specific pulse trains (pulse

train, col. 1 lines 15-25) for frame synchronization (frame synchronization, col. 1 line 6 – sol. 2 line 2, col. 5 lines 55-68 and col. 9 lines 15-20) are allocated respectively;

(b) a step of generating low speed signals (speed signal, col. 1 lines 60-67) of plural channels including said first and second signals and transmission signals;

(c) a step of partly converting (converter, col. 4 lines 55-65 and converted, col. 10 lines 15-25) said first and second signals in each channel into either of "1/0" alternating signals and "0/1" alternating signals; and

(d) a step of time-division multiplexing said low speed signals (speed signal, col. 1 lines 60-67) after said step (c), thereby producing high speed signals (high speed signal, col. 1 lines 65-68).

Referring to claim 2, Fujimoto discloses a time-division multiplexing (time division multiplexing, col. 1 lines 11-22) method comprising:

(a) a step of generating a plurality of first signals and a plurality of second signals to which specific pulse trains (pulse train, col. 1 lines 15-25) for frame synchronization (frame synchronization, col. 1 line 6 – sol. 2 line 2, col. 5 lines 55-68 and col. 9 lines 15-20) are allocated respectively;

(b) a step of generating low speed (speed signal, col. 1 lines 60-67) signals of plural channels including said first and second signals and transmission signals;

(c) a step of partly converting (converter, col. 4 lines 55-65 and converted, col. 10 lines 15-25) said first and second signals in either of each odd channel and each even channel into "1/0" alternating signals, while partly converting (converter, col. 4 lines 55-

65 and converted, col. 10 lines 15-25) said first and second signals in the other channels into "0/1" alternating signals; and

(d) a step of time-division multiplexing (time division multiplexing, col. 1 lines 11-22) said low speed signals (speed signal, col. 1 lines 60-67) after said step (c), thereby producing high speed signals (high speed signal, col. 1 lines 65-68).

Referring to claim 3, Fujimoto discloses a time-division multiplexing (time division multiplexing, col. 1 lines 11-22) method comprising:

(a) step of generating a plurality of first signals and a plurality of second signals to which specific pulse trains (pulse train, col. 1 lines 15-25) for frame synchronization (frame synchronization, col. 1 line 6 – sol. 2 line 2, col. 5 lines 55-68 and col. 9 lines 15-20) are allocated respectively;

(b) a step of generating low speed signals (speed signal, col. 1 lines 60-67) of plural channels including said first and second signals and transmission signals;

(c) a step of partly converting (converter, col. 4 lines 55-65 and converted, col. 10 lines 15-25) said first and second signals in either of each odd channel and each even channel into all "0" signals, while partly converting (converter, col. 4 lines 55-65 and converted, col. 10 lines 15-25) said first and second signals in the other channels into all "1" signals; and

(d) a step of time-division multiplexing (time division multiplexing, col. 1 lines 11-22) said low speed signals (speed signal, col. 1 lines 60-67) after said step (c), thereby producing high speed signals (high speed signal, col. 1 lines 65-68).

Referring to claim 4, Fujimoto discloses a time-division multiplexing (time division multiplexing, col. 1 lines 11-22) method comprising:

(a) a step of generating a plurality of first signals and a plurality of second signals to which specific pulse trains (pulse train, col. 1 lines 15-25) for frame synchronization (frame synchronization, col. 1 line 6 – sol. 2 line 2, col. 5 lines 55-68 and col. 9 lines 15-20) are allocated respectively;

(b) a step of generating low speed signals (speed signal, col. 1 lines 60-67) of plural channels including said first and second signals and transmission signals;

(c) a step of partly converting (converter, col. 4 lines 55-65 and converted, col. 10 lines 15-25) said first and second signals in either of each odd channel and each even channel into inverted (inverting, col. 6 lines 20-25) signals; and

(d) a step of time-division multiplexing (time division multiplexing, col. 1 lines 11-22) said low speed signals (speed signal, col. 1 lines 60-67) after said step (c), thereby producing high speed signals (high speed signal, col. 1 lines 65-68).

Referring to claim 8, Fujimoto discloses a time-division multiplexing (time division multiplexing, col. 1 lines 11-22) method comprising:

(a) a step of generating a plurality of first and a plurality of second signals to which specific pulse trains (pulse train, col. 1 lines 15-25) for frame synchronization (frame synchronization, col. 1 line 6 – sol. 2 line 2, col. 5 lines 55-68 and col. 9 lines 15-20) are allocated respectively;

(b) a step of generating low speed signals (speed signal, col. 1 lines 60-67) of plural channels including said first and second signals and transmission signals;

(c) a step of entirely converting (converter, col. 4 lines 55-65 and converted, col. 10 lines 15-25) said first and second signals in either of each odd channel and each even channel into inverted (inverting, col. 6 lines 20-25) signals; and

(d) a step of time-division multiplexing (time division multiplexing, col. 1 lines 11-22) said low speed signals (speed signal, col. 1 lines 60-67) after said step (c), thereby producing high speed signals (high speed signal, col. 1 lines 65-68).

5. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Kazawa et al. (JP05-292050).

Referring to claim 1, Kazawa et al. discloses a time-division multiplexing method comprising: (a) a step of generating a plurality of first signals and a plurality of second signals to which specific pulse trains for frame synchronization (frame synchronization, [0004], [0006], [0010], [0011], [0012], [0013] and [0015]) are allocated respectively;

(b) a step of generating low speed (low speed, [0010], [0011] and [0013]) signals of plural channels including said first and second signals and transmission signals;

(c) a step of partly converting said first and second signals in each channel into either of "1/0" alternating signals and "0/1" alternating signals (bit string, [0003] and 1010, [0006] and [0015]); and

(d) a step of time-division multiplexing said low speed (low speed, [0010], [0011] and [0013]) signals after said step (c), thereby producing high speed (high speed, [0011] and [0016]) signals.

Referring to claim 2, Kazawa et al. discloses a time-division multiplexing method comprising:

(a) a step of generating a plurality of first signals and a plurality of second signals to which specific pulse trains for frame synchronization (frame synchronization, [0004], [0006], [0010], [0011], [0012], [0013] and [0015]) are allocated respectively;

(b) a step of generating low speed (low speed, [0010], [0011] and [0013]) signals of plural channels including said first and second signals and transmission signals;

(c) a step of partly converting said first and second signals in either of each odd channel and each even channel into "1/0" alternating signals, while partly converting said first and second signals in the other channels into "0/1" alternating signals (bit string, [0003] and 1010, [0006] and [0015]); and

(d) a step of time-division multiplexing said low speed (low speed, [0010], [0011] and [0013]) signals after said step (c), thereby producing high speed (high speed, [0011] and [0016]) signals.

Referring to claim 3, Kazawa et al. discloses a time-division multiplexing method comprising:

(a) step of generating a plurality of first signals and a plurality of second signals to which specific pulse trains for frame synchronization (frame synchronization, [0004], [0006], [0010], [0011], [0012], [0013] and [0015]) are allocated respectively;

(b) a step of generating low speed (low speed, [0010], [0011] and [0013]) signals of plural channels including said first and second signals and transmission signals;

(c) a step of partly converting said first and second signals in either of each odd channel and each even channel into all "0" signals, while partly converting said first and

second signals in the other channels into all "1" signals (bit string, [0003] and 1010, [0006] and [0015]); and

(d) a step of time-division multiplexing said low speed (low speed, [0010], [0011] and [0013]) signals after said step (c), thereby producing high speed (high speed, [0011] and [0016]) signals.

6. Claims 1-4, 6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Suh et al. (U.S. Patent No. 5,710,774).

Referring to claim 1, Suh et al. discloses a time-division multiplexing (time-division multiplexing, col. 1 lines 15-24) method comprising: (a) a step of generating a plurality of first signals and a plurality of second signals to which specific pulse trains (pulse train, col. 1 lines 20-24) for frame synchronization (frame synchronization, col. 1 lines 15-52, col. 7 lines 35-45 and col. 9 lines 7-11) are allocated respectively;

(b) a step of generating low speed signals (speed signal, col. 1 lines 25-34) of plural channels including said first and second signals and transmission signals;

(c) a step of partly converting (converting, col. 2 lines 15-30, col. 6 lines 45-55 and col. 7 lines 1-10) said first and second signals in each channel into either of "1/0" alternating signals and "0/1" alternating signals; and

(d) a step of time-division multiplexing (time-division multiplexing, col. 1 lines 15-24) said low speed signals after said step (c), thereby producing high speed signals (high speed signal, col. 1 lines 25-34).

Referring to claim 2, Suh et al. discloses a time-division multiplexing (time-division multiplexing, col. 1 lines 15-24) method comprising:

(a) a step of generating a plurality of first signals and a plurality of second signals to which specific pulse trains (pulse train, col. 1 lines 20-24) for frame synchronization (frame synchronization, col. 1 lines 15-52, col. 7 lines 35-45 and col. 9 lines 7-11) are allocated respectively;

(b) a step of generating low speed signals (speed signal, col. 1 lines 25-34) of plural channels including said first and second signals and transmission signals;

(c) a step of partly converting (converting, col. 2 lines 15-30, col. 6 lines 45-55 and col. 7 lines 1-10) said first and second signals in either of each odd channel and each even channel into "1/0" alternating signals, while partly converting (converting, col. 2 lines 15-30, col. 6 lines 45-55 and col. 7 lines 1-10) said first and second signals in the other channels into "0/1" alternating signals; and

(d) a step of time-division multiplexing (time-division multiplexing, col. 1 lines 15-24) said low speed signals after said step (c), thereby producing high speed signals (high speed signal, col. 1 lines 25-34).

Referring to claim 3, Suh et al. discloses a time-division multiplexing (time-division multiplexing, col. 1 lines 15-24) method comprising:

(a) step of generating a plurality of first signals and a plurality of second signals to which specific pulse trains (pulse train, col. 1 lines 20-24) for frame synchronization (frame synchronization, col. 1 lines 15-52, col. 7 lines 35-45 and col. 9 lines 7-11) are allocated respectively;

(b) a step of generating low speed signals (speed signal, col. 1 lines 25-34) of plural channels including said first and second signals and transmission signals;

(c) a step of partly converting (converting, col. 2 lines 15-30, col. 6 lines 45-55 and col. 7 lines 1-10) said first and second signals in either of each odd channel and each even channel into all "0" signals, while partly converting (converting, col. 2 lines 15-30, col. 6 lines 45-55 and col. 7 lines 1-10) said first and second signals in the other channels into all "1" signals; and

(d) a step of time-division multiplexing (time-division multiplexing, col. 1 lines 15-24) said low speed signals after said step (c), thereby producing high speed signals (high speed signal, col. 1 lines 25-34).

Referring to claim 4, Suh et al. discloses a time-division multiplexing (time-division multiplexing, col. 1 lines 15-24) method comprising:

(a) a step of generating a plurality of first signals and a plurality of second signals to which specific pulse trains (pulse train, col. 1 lines 20-24) for frame synchronization (frame synchronization, col. 1 lines 15-52, col. 7 lines 35-45 and col. 9 lines 7-11) are allocated respectively;

(b) a step of generating low speed signals (speed signal, col. 1 lines 25-34) of plural channels including said first and second signals and transmission signals;

(c) a step of partly converting (converting, col. 2 lines 15-30, col. 6 lines 45-55 and col. 7 lines 1-10) said first and second signals in either of each odd channel and each even channel into inverted signals (inverted signal, col. 5 lines 46-60); and

(d) a step of time-division multiplexing (time-division multiplexing, col. 1 lines 15-24) said low speed signals after said step (c), thereby producing high speed signals (high speed signal, col. 1 lines 25-34).

Referring to claim 6, Suh et al. discloses a time-division multiplexing (time-division multiplexing, col. 1 lines 15-24) method comprising:

(a) a step of generating a plurality of first signals and a plurality of second signals to which specific pulse trains (pulse train, col. 1 lines 20-24) for frame synchronization (frame synchronization, col. 1 lines 15-52, col. 7 lines 35-45 and col. 9 lines 7-11) are allocated respectively;

(b) a step of generating low speed signals (speed signal, col. 1 lines 25-34) of plural channel including said first and second signals and transmission signals;

(c) a step of partly converting (converting, col. 2 lines 15-30, col. 6 lines 45-55 and col. 7 lines 1-10) said first and second signals in either of each odd channel and each even channel into random patterns, while partly converting (converting, col. 2 lines 15-30, col. 6 lines 45-55 and col. 7 lines 1-10) said first and second signals in the other channels into inverted (inverted signal, col. 5 lines 46-60) random patterns obtained by inverting (inverted signal, col. 5 lines 46-60) said random patterns; and

(d) a step of time-division multiplexing (time-division multiplexing, col. 1 lines 15-24) said low speed signals after said step (c), thereby producing high speed signals (high speed signal, col. 1 lines 25-34).

Referring to claim 8, Suh et al. discloses a time-division multiplexing (time-division multiplexing, col. 1 lines 15-24) method comprising:

(a) a step of generating a plurality of first and a plurality of second signals to which specific pulse trains (pulse train, col. 1 lines 20-24) for frame synchronization

(frame synchronization, col. 1 lines 15-52, col. 7 lines 35-45 and col. 9 lines 7-11) are allocated respectively;

(b) a step of generating low speed signals (speed signal, col. 1 lines 25-34) of plural channels including said first and second signals and transmission signals;

(c) a step of entirely converting (converting, col. 2 lines 15-30, col. 6 lines 45-55 and col. 7 lines 1-10) said first and second signals in either of each odd channel and each even channel into inverted signals (inverted signal, col. 5 lines 46-60); and

(d) a step of time-division multiplexing (time-division multiplexing, col. 1 lines 15-24) said low speed signals after said step (c), thereby producing high speed signals (high speed signal, col. 1 lines 25-34).

***Allowable Subject Matter***

7. Claims 5 and 7 are allowed.

***Conclusion***

8. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

**or faxed to:**

(571) 273-8300, (for formal communications intended for entry)

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jamal A. Fox whose telephone number is (571) 272-3143. The examiner can normally be reached on Monday-Friday 6:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on (571) 272-3134. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to 2600 Customer Service whose telephone number is (571) 272-2600.

Jamal A. Fox

WELLINGTON CHIN
SUPERVISORY PATENT EXAMINER